

The Ethics of Artificial Intelligence in Academic Environment: Safeguarding Integrity in the Digital Age

Rizka Zulfikar*, Abdurrahim, Purboyo, Rahmi Widyanti, Basuki, Amalia Wahyuni

Management Department, Islamic University of Kalimantan, Banjarmasin, Indonesia

*Corresponding author. Email: rizkazulfikar@gmail.com

ABSTRACT

This study critically examined the ethical implications of Artificial Intelligence (AI) integration within academic environments, aiming to strengthen institutional safeguards for academic integrity in the digital age. With a bibliometric approach, the analysis draws upon 107 documents published between 2015 and 2025 in the Scopus database, employing VOSviewer for network, overlay, and density mapping. The findings reveal a decentralized and rapidly expanding research landscape, marked by high collaboration rates but moderate citation impact, suggesting both vibrancy and conceptual fragmentation. Key thematic concentrations include algorithmic fairness, AI-assisted authorship, and transparency in academic processes. Temporal analyses highlight a shift from foundational ethical concerns to emergent pedagogical challenges, reflecting a reactive rather than anticipatory research posture. Moreover, the underrepresentation of non-Western epistemologies points to critical gaps in inclusivity. This study underscores the necessity of developing proactive, interdisciplinary, and globally attuned ethical frameworks to ensure AI's responsible deployment in academia. The findings advocate for a recalibration of scholarly discourse towards a more holistic, sustained, and equity-driven ethical engagement with AI technologies.

Keywords: *Ethics, Ethical Artificial Intelligence, Artificial Intelligence, academics, bibliometric*

1. INTRODUCTION

In recent years, the rapid integration of artificial intelligence (AI) into academic environments has precipitated a complex phenomenon characterized by both transformative opportunities and substantial ethical challenges (Guleria et al., 2023; Steinerová & Ondrišová, 2024). The emergence of AI technologies—from chatbots and generative language models to advanced data analytics—has redefined various facets of academic work, including teaching, learning, and research. However, significant concerns surrounding academic integrity, data privacy, and the authenticity of scholarly work have surfaced, demanding urgent ethical scrutiny (Guleria et al., 2023). Previous studies have systematically examined the ethical dimensions of AI across various contexts. Steinerová & Ondrišová (2024) have highlighted a paradigmatic shift towards ethics in AI through bibliometric analyses, revealing the interdisciplinary collaboration that is increasingly central to tackling ethical challenges in the information age. Similarly, research on ChatGPT and other conversational agents in academia has underscored the potential of such tools to stifle critical thinking and compromise scholarly integrity if not used responsibly (Guleria et al., 2023). Other studies have ventured into the role of digital transformation in higher education, emphasizing the necessity for sustainable and responsible AI adoption that bridges the gap between technological innovation and ethical accountability (Sayed et al., 2024; Shenkoya & Kim, 2023).

Despite these important contributions, a notable research problem persists regarding the comprehensive understanding of how AI affects academic integrity. Specific ethical concerns—such as issues related to data security, algorithmic bias, and the authenticity of AI-generated content—have received attention (Guleria et al., 2023; Dergaa et al., 2023), yet there remains a dearth of research employing bibliometric approaches to examine these issues holistically within academia. Early investigations, including those by Kooli (2023) and Baker et al. (2023) have described ethical dilemmas in the deployment of AI tools; however, these studies often lack the integration of multidisciplinary insights necessary to capture the multifaceted nature of the problem entirely.

The research gap is further accentuated by limited attention to the interplay between ethical guidelines and academic digital literacy. Although studies such as Hakimi et al. (2021) have mapped ethical concerns in digital trace data usage in educational research; there is insufficient focus on designing and implementing institutional policies that protect academic integrity while encouraging innovative AI use. Moreover, while previous bibliometric analyses have considered technological ethics broadly (Steinerová & Ondrišová, 2024; Verma & Garg, 2023), they have seldom

scrutinized the ethical challenges unique to academic environments, thereby leaving unanswered questions about best practices and regulatory frameworks necessary for reconciling innovation with ethical preservation.

The novelty of the current study lies in its integration of a bibliometric analysis to address this specific gap. By examining literature published between 2020 and 2025 from the Scopus database, this research aims to provide an empirical, multi-dimensional perspective on the ethical issues precipitated by AI in academic contexts. Unlike previous studies that predominantly focused on isolated aspects of AI ethics (e.g., the effects of generative AI on academic writing Dergaa et al. (2023)), this study synthesizes findings from diverse disciplinary perspectives. It leverages bibliometric mapping techniques to unearth trends, interconnections, and emergent themes that underscore the current state of ethical discourse in academia (Steinerová & Ondrišová, 2024; Verma & Garg, 2023).

The primary purpose of this research is to safeguard academic integrity in the digital age by establishing a robust ethical framework for AI use within academic institutions. This framework is intended to guide policymakers, educators, and researchers by offering comprehensive insights into AI technologies' ethical challenges and implications. The study seeks to highlight existing deficiencies in policy and practice and propose actionable strategies for integrating ethical guidelines into the digital transformation discourse within academia.

2. METHODOLOGY

This research adopts a robust and replicable methodology designed to systematically map the contemporary research landscape of ethical concerns associated with artificial intelligence (AI) within academic environments. The approach is structured into three interconnected phases: data sourcing, selection, and analysis. Initially, the Scopus database was chosen as the principal source due to its extensive coverage of high-quality academic outputs—including journals, conference proceedings, books, and book chapters—ensuring the comprehensive inclusion of pioneering and emerging scholarship in the field. This selection mirrors current trends in publication volume and research collaboration and significantly enhances the academic validity of the subsequent bibliometric mapping.

In the data sourcing phase, a meticulously defined protocol was implemented, incorporating a broad keyword-based search strategy tailored to capture studies addressing the ethics of AI in academic settings. The rigorous process adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, ensuring that each step—from initial search through de-duplication and screening—is completely transparent and reproducible (Page et al., 2021). By confining the analysis to English-language documents published between 2015 and 2025, the study ensures that the dataset reflects the evolution of research trends and the current state of the art, providing an up-to-date picture of the field. Following the thorough data selection, the study employed advanced bibliometric analysis using the VOSviewer software. This tool enables a nuanced visualization of publication patterns, thematic evolutions, and the intricate interrelationships among key concepts in the literature (Oladinrin et al., 2023; Traymbak et al., 2024). VOSviewer facilitates network, overlay, and density visualizations, making it possible to discern established and emergent thematic clusters in the research.

3. RESULT AND DISCUSSION

3.1 Main Information

Table 1 provides a comprehensive snapshot of the research landscape on the ethics of Artificial Intelligence (AI) in academia over the decade from 2015 to 2025. One hundred seven documents were analyzed and authored by 348 scholars across 81 different sources. Interestingly, only 16 documents are single-authored, highlighting a strong trend toward collaborative research, which is further reinforced by an average of 3.4 co-authors per document and an international co-authorship rate of 22.43%. This information reflects the inherently global and interdisciplinary nature of ethical concerns in AI, requiring insights from diverse cultural, legal, and educational perspectives.

Table 1. Main Information Data Research

Description	Results	Description	Results
MAIN INFORMATION ABOUT DATA		AUTHORS	
Timespan	2015:2025	Authors	348
Sources (Journals, Books, Conference Proceedings)	81	Authors of single-authored docs	16
Documents	107	AUTHORS COLLABORATION	
Annual Growth Rate %	23.11	Single-authored docs	16

Document Average Age	1.86	Co-Authors per Doc	3.4
Average citations per doc	7.093	International co-authorships %	22.43
References	0	DOCUMENT TYPES	
DOCUMENT CONTENTS		article	34
Keywords Plus (ID)	772	Book Chapter	1
Author's Keywords (DE)	378	conference paper	72

The annual growth rate of 23.11% signals a surging scholarly interest in this domain, likely catalyzed by the exponential adoption of AI tools in academic settings during and after the pandemic. The relatively young average document age (1.86 years) demonstrates the field’s dynamic evolution, where novel challenges continuously emerge and demand fresh ethical scrutiny. The average citation per document (7.093) suggests a healthy academic engagement but also points to the need for further foundational work to solidify ethical standards. This dataset's structure highlights a rapidly expanding, highly collaborative scholarly conversation concerned with AI's capabilities and, more critically, with its responsible integration into academic ecosystems, safeguarding integrity, equity, and trust. The prolific growth rate underscores a surging urgency and scholarly attention toward AI's ethical ramifications in academic settings. However, this growth may not necessarily equate to depth or quality. The relatively low average citation per document (7.093) hints that while many publish on the topic, few works are foundational or widely influential and may suggest either fragmentation in the field or that it is still in its conceptual infancy.

3.2 Network Analysis

Figure 1 illustrates a network analysis that unveils the complex relational architecture among scholars, institutions, and principal concepts within the domain of AI ethics in academic settings. Prominent nodes, representing influential authors and seminal publications, are intricately interwoven through extensive collaborations and citation linkages, resulting in distinct thematic clusters (Di Vaio et al., 2020; Watrianthos et al., 2023). These clusters encapsulate diverse research foci, such as the investigation of algorithmic bias in automated grading systems, the development of detection mechanisms for academic dishonesty, explorations of philosophical frameworks underpinning AI ethics, and the formulation of governance models for the responsible use of AI in academia (Di Vaio et al., 2020).

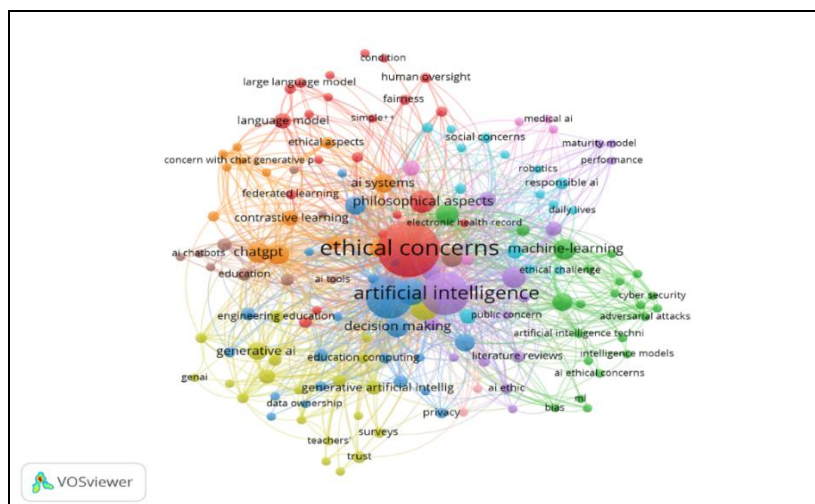


Figure 1. Network Analysis

The visualization underscores a notable decentralization of scholarly authority, with no single researcher or institution monopolizing the discourse; rather, it reflects a rich plurality of voices—a factor that is promising for ethical deliberation, as diverse perspectives tend to fortify robust ethical frameworks (Gao et al., 2024; Watrianthos et al., 2023). At the same time, several peripheral nodes indicate that emerging researchers and nascent theoretical contributions have yet to be fully integrated into mainstream discussions. This dispersion denotes opportunities for greater inclusion and cross-disciplinary engagement and signals a potential challenge in consolidating a coherent ethical framework across the field (Di Vaio et al., 2020).

This heterogeneous network embodies an essential ethical imperative in academia: safeguarding academic integrity must be approached as a collective, continuously negotiated process rather than as a rigid, top-down imposition. While such decentralization facilitates pluralism and broadens the spectrum of perspectives, it may also

engender fragmentation of consensus in normative domains like ethics, where uniform guidelines are critically important (Watrianthos et al., 2023). Moreover, the absence of a clear core-periphery structure—where seminal works could anchor emergent research—might hamper the convergence of these diverse contributions into a unified framework, leaving educators and institutions without coherent guidance for the responsible implementation of AI technologies (Yuan et al., 2024). The disconnection of many peripheral nodes from the central thematic dialogue suggests the existence of geographical or disciplinary silos, raising a more profound ethical concern regarding representativeness. Specifically, this disconnect prompts an inquiry into whose voices are missing from the discourse. It is imperative to question whether scholars from the Global South or non-English-speaking contexts are adequately represented, as ethics is inherently contextual. The underrepresentation of diverse epistemologies could skew perspectives on what is deemed "ethical" in deploying AI in academic settings, thereby limiting the field's comprehensiveness and applicability (Gao et al., 2024).

3.3 Overlay Analysis

The overlay analysis presented in Figure 2 introduces a temporal and developmental dimension to the network, elucidating when pivotal themes and collaborative linkages first emerged and how they have evolved. Early studies, dating back to 2015–2018, concentrated on foundational ethical concerns, most notably data privacy and algorithmic discrimination issues. As the landscape has shifted, more recent nodes have begun to surface, addressing topics such as AI-assisted authorship attribution, the ethical implications of AI tutoring systems, and the inherent risks of deploying automated tools for detecting research misconduct (Ahmed et al., 2023). The conspicuous bright yellow nodes within the overlay suggest that the most intensive scholarly activity currently centers on transparency, accountability, and the humanization of AI systems in educational contexts. This trend underscores academia's urgent need to recalibrate ethical frameworks in response to new technological realities and in alignment with evolving societal expectations regarding fairness, agency, and trust (Runcan et al., 2025).

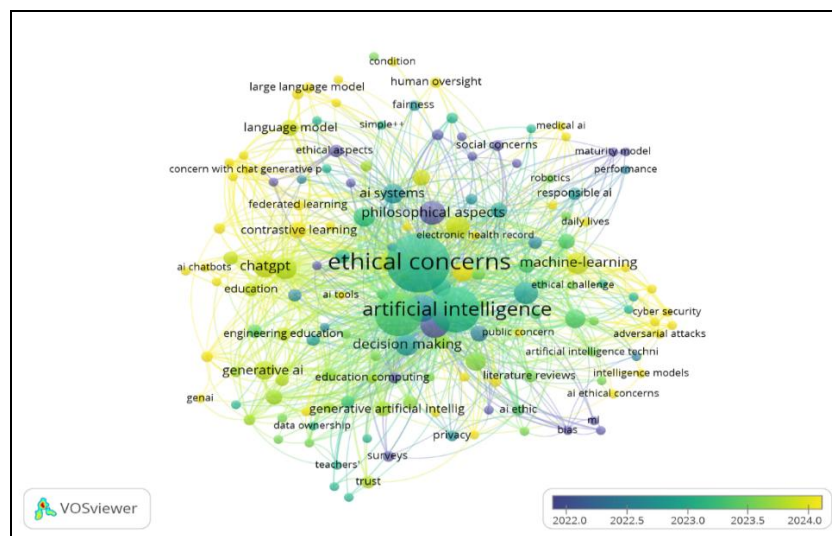


Figure 2. Overlay Analysis

Furthermore, the overlay analysis captures a marked transition from initial, more structural concerns—such as issues of pervasive digital surveillance—to emerging pedagogical challenges exemplified by the integration of generative AI tools like ChatGPT in assessment practices. This observed shift reveals an underlying tension: while the dynamism of the field reflects a robust engagement with new technology, it also suggests a reactive pattern of scholarship where research is driven by the latest innovations rather than by a proactive, long-term vision for ethical integration (Artyukhov et al., 2024). Such a reactive orientation risks fragmenting consensus, especially when there is limited longitudinal or cross-cultural research that can fully contextualize and generalize ethical prescriptions.

The overlay analysis portrays a field in vigorous flux, continually reshaping its priorities in response to AI's disruptive trajectory. This temporal evolution illustrates that while scholars are indeed contributing to a rich and multifaceted discourse, there remains an imperative for more proactive and inclusive research that bridges disciplinary and geographical divides. Without expanding the methodological depth to include longitudinal or comparative analyses, ethical guidelines may remain too narrow or transient, potentially ceding normative leadership to the rapid innovation cycles of technology developers. Consequently, a more integrative approach incorporating diverse

epistemological perspectives is essential to ensuring that ethical deliberations in AI research within academic settings remain comprehensive, anticipatory, and contextually relevant.

3.4 Density Analysis

The Density Analysis depicted in Figure 3 provides a nuanced perspective on the concentration of scholarly activity across various research topics. Warmer hues on the density map highlight critical ethical hotspots, such as algorithmic fairness, intellectual property rights related to AI-generated contributions, and the responsible use of AI in academic assessment environments (Ajayi, 2024; Mukhamediev et al., 2022). These areas of concentrated research indicate where attention is heavily focused, yet they also reveal potential ethical blind spots. For example, while the literature robustly addresses technical and procedural dimensions of AI ethics, significant gaps remain regarding the psychological impact of AI integration on students' learning autonomy and the long-term institutional ramifications of widespread AI adoption (Ajayi, 2024; Sposato, 2025).

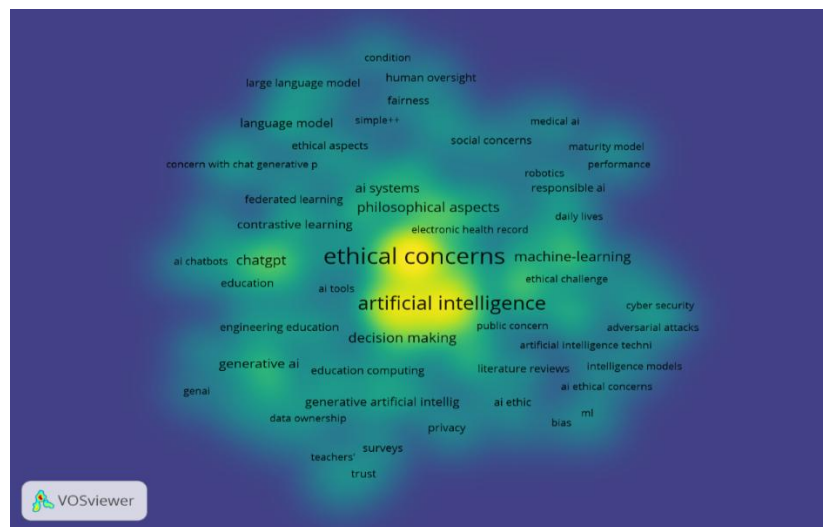


Figure 3. Density Analysis

Furthermore, density visualization suggests that while some issues attract extensive research interest, others remain underexplored. Emerging areas, such as AI-driven mental health interventions in academia, have not yet received proportional scholarly attention, urging a more balanced and anticipatory research agenda (Ajayi, 2024). Recognizing that high-density research clusters do not inherently equate to high-impact findings is crucial. The aggregation of studies around popular themes can create echo chambers, where repetitive debates may marginalize equally important yet less glamorous issues, such as the emotional labor implicated in AI tutoring systems or the ethical design of educational algorithms that accommodate neurodiverse learners (Dabis & Csáki, 2024; Goktas, 2024; Lewis & Stoyanovich, 2022).

Moreover, the density analysis uncovers an important methodological critique: the absence of clear normative or jurisprudential anchors within these clusters and raises the question of whether scholars are rigorously engaging with established ethical frameworks, such as deontological or virtue ethics, or if the current discourse is simply reactive and fragmented in response to rapid technological changes (Dabis & Csáki, 2024; Lewis & Stoyanovich, 2022).

4. CONCLUSION

The bibliometric analysis delineates the contours of contemporary scholarship on AI ethics in academia, revealing a field characterized by rapid expansion, interdisciplinary collaboration, and evolving thematic priorities. Despite notable advancements, the research landscape remains fragmented, with limited theoretical consolidation and insufficient global representativeness. While prominent themes such as algorithmic fairness and AI-generated academic outputs dominate scholarly attention, deeper structural and philosophical inquiries remain underexplored. The temporal progression of research interests evidences a predominantly reactive orientation, suggesting that ethical theorization often lags behind technological innovation.

These findings illuminate critical vulnerabilities in current academic responses to AI's ethical challenges. The absence of longitudinal, comparative, and contextually diverse studies risks narrowing the ethical discourse, rendering

it less resilient to future technological disruptions. Therefore, safeguarding academic integrity necessitates a strategic shift toward proactive, inclusive, and interdisciplinary ethical frameworks. Academic institutions, policymakers, and researchers must collaboratively cultivate ethically robust environments prioritizing human-centered values, epistemic diversity, and anticipatory governance. Only through such deliberate and forward-looking efforts can academia fully harness AI's transformative potential while preserving its core mission of integrity, transparency, and critical inquiry.

REFERENCES

- Ahmed, M., Othman, R. B., & Fauzan Bin Noordin, M. (2023). TRENDS IN OPEN SCIENCE: A BIBLIOMETRIC ANALYSIS OF RESEARCH TOPICS, CITATIONS, JOURNALS, AND PRODUCTIVE ENTITIES. In *Journal of Information Systems and Digital Technologies* (Vol. 5, Issue 2).
- Ajayi, A. (2024). AI Integration in STEM Curriculum: A Conceptual Model for Deepening Student Engagement and Learning. In *Int. j. adv. multidisc. res. stud* (Vol. 4, Issue 6). www.multiresearchjournal.com
- Artyukhov, A., Wołowiec, T., Artyukhova, N., Bogacki, S., & Vasylieva, T. (2024). SDG 4, Academic Integrity and Artificial Intelligence: Clash or Win-Win Cooperation? In *Sustainability (Switzerland)* (Vol. 16, Issue 19). Multidisciplinary Digital Publishing Institute (MDPI). <https://doi.org/10.3390/su16198483>
- Baker, B., Mills, K. A., McDonald, P., & Wang, L. (2023). AI, Concepts of Intelligence, and Chatbots: The “Figure of Man,” the Rise of Emotion, and Future Visions of Education. *Teachers College Record: The Voice of Scholarship in Education*, 125(6). <https://doi.org/10.1177/01614681231191291>
- Dabis, A., & Csáki, C. (2024). AI and ethics: Investigating the first policy responses of higher education institutions to the challenge of generative AI. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-03526-z>
- Dergaa, I., Chamari, K., Zmijewski, P., & Saad, H. Ben. (2023). From human writing to artificial intelligence generated text: examining the prospects and potential threats of ChatGPT in academic writing. *Biology of Sport*, 40(2). <https://doi.org/10.5114/BIOLOSPORT.2023.125623>
- Di Vaio, A., Palladino, R., Hassan, R., & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. *Journal of Business Research*, 121. <https://doi.org/10.1016/j.jbusres.2020.08.019>
- Gao, D. K., Haverly, A., Mittal, S., Wu, J., & Chen, J. (2024). A Bibliometric Analysis, Critical Issues, and Key Gaps. *International Journal of Business Analytics*, 11(1). <https://doi.org/10.4018/IJBAN.338367>
- Goktas, P. (2024). Ethics, transparency, and explainability in generative ai decision-making systems: a comprehensive bibliometric study. In *Journal of Decision Systems*. Taylor and Francis Ltd. <https://doi.org/10.1080/12460125.2024.2410042>
- Guleria, A., Krishan, K., Sharma, V., & Kanchan, T. (2023). ChatGPT: ethical concerns and challenges in academics and research. *Journal of Infection in Developing Countries*, 17(9). <https://doi.org/10.3855/jidc.18738>
- Hakimi, L., Eynon, R., & Murphy, V. A. (2021). The Ethics of Using Digital Trace Data in Education: A Thematic Review of the Research Landscape. *Review of Educational Research*, 91(5). <https://doi.org/10.3102/00346543211020116>
- Kooli, C. (2023). Chatbots in Education and Research: A Critical Examination of Ethical Implications and Solutions. *Sustainability (Switzerland)*, 15(7). <https://doi.org/10.3390/su15075614>
- Lewis, A., & Stoyanovich, J. (2022). Teaching Responsible Data Science: Charting New Pedagogical Territory. *International Journal of Artificial Intelligence in Education*, 32(3). <https://doi.org/10.1007/s40593-021-00241-7>
- Mukhamediev, R. I., Popova, Y., Kuchin, Y., Zaitseva, E., Kalimoldayev, A., Symagulov, A., Levashenko, V., Abdoldina, F., Gopejenko, V., Yakunin, K., Muhamedijeva, E., & Yelis, M. (2022). Review of Artificial Intelligence and Machine Learning Technologies: Classification, Restrictions, Opportunities and Challenges. In *Mathematics* (Vol. 10, Issue 15). MDPI. <https://doi.org/10.3390/math10152552>
- Oladinrin, O. T., Arif, M., Rana, M. Q., & Gyoh, L. (2023). Interrelations between construction ethics and innovation: a bibliometric analysis using VOSviewer. In *Construction Innovation* (Vol. 23, Issue 3). <https://doi.org/10.1108/CI-07-2021-0130>

- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., & Moher, D. (2021). Updating guidance for reporting systematic reviews: development of the PRISMA 2020 statement. *Journal of Clinical Epidemiology*, 134. <https://doi.org/10.1016/j.jclinepi.2021.02.003>
- Runcan, R., Hațegan, V., Toderici, O., Croitoru, G., Gavrilă-Ardelean, M., Cuc, L. D., Rad, D., Costin, A., & Dughi, T. (2025). Ethical AI in Social Sciences Research: Are We Gatekeepers or Revolutionaries? *Societies*, 15(3). <https://doi.org/10.3390/soc15030062>
- Sayed, A., Telbany, S., & Ashmawy, S. (2024). AI-driven transformation: advancing information literacy at the British University in Egypt library. *Cybrarians Journal*, 73, 62–87. <https://doi.org/10.70000/cj.2024.73.619>
- Shenkoya, T., & Kim, E. (2023). Sustainability in Higher Education: Digital Transformation of the Fourth Industrial Revolution and Its Impact on Open Knowledge. *Sustainability (Switzerland)*, 15(3). <https://doi.org/10.3390/su15032473>
- Sposato, M. (2025). Artificial intelligence in educational leadership: a comprehensive taxonomy and future directions. *International Journal of Educational Technology in Higher Education*, 22(1). <https://doi.org/10.1186/s41239-025-00517-1>
- Steinerová, J., & Ondříšová, M. (2024). Information Ethics in Light of Bibliometric Analyses: Discovering a Shift to Ethics of Artificial Intelligence. In *Acta Informatica Pragensia* (Vol. 13, Issue 3, pp. 433–459). Prague University of Economics and Business. <https://doi.org/10.18267/j.aip.237>
- Traymbak, S., Sharma, M., Anand, A., & Shukla, A. (2024). Chatbot technology in the education sector: a bibliometrics analysis using VOS viewer. *International Journal of System Assurance Engineering and Management*. <https://doi.org/10.1007/s13198-023-02230-6>
- Verma, S., & Garg, N. (2023). The trend and future of techno-ethics: a bibliometric analysis of three decades. *Library Hi Tech*. <https://doi.org/10.1108/LHT-10-2022-0477>
- Watrianthos, R., Ahmad, S. T., & Muskhir, M. (2023). Charting the Growth and Structure of Early ChatGPT-Education Research: A Bibliometric Study. *Journal of Information Technology Education: Innovations in Practice*, 22. <https://doi.org/10.28945/5221>
- Yuan, Q., Chen, T., Yang, Q., & Zhang, Z. (2024). Unveiling Ethical AI: An In-Depth Bibliometric and Visual Exploration. *Indian Journal of Pharmaceutical Education and Research*, 58(3), 1084–1101. <https://doi.org/10.5530/ijper.58.4.120>